



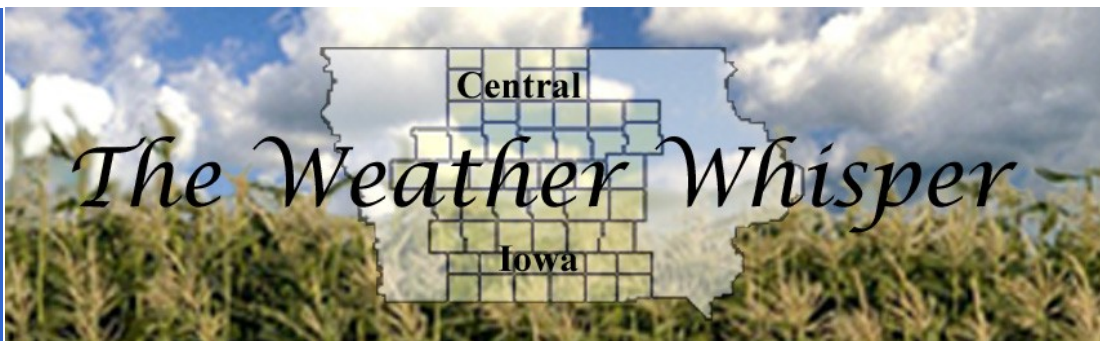
NATIONAL WEATHER  
SERVICE  
DES MOINES IA

- Tingley  
Tornado
- Bronze Medal  
Award



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Volume 4, Issue 2

Summer 2010

## First Central Iowa Tornado of the Season Near Tingley, Iowa in Ringgold County *by Roger Vachalek, General Forecaster*



*Tornado that touched down in Ringgold County 7 miles north of Mt. Ayr, or about 3 miles southwest of Tingley, Iowa on June 1, 2010. It had a path length of 1.5 miles and lasted about 10 minutes before dissipating. Photo courtesy of Mark Schnackenberg.*

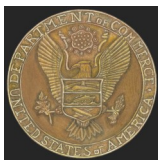
The first tornado of the 2010 season for the Des Moines Forecast Area occurred on June 1<sup>st</sup> in Ringgold County in southern Iowa. A very unstable air mass that accompanied a spring storm over the Midwest pushed into Iowa during the morning hours. By late afternoon, a second area of low pressure pushed a warm front into southwest Iowa. Thunderstorms developed along this boundary by 400 pm CDT and strengthened as they moved northeast toward Ringgold County. By 501 pm CDT the storms became severe and within 5 minutes the storm was strong enough to produce a circulation that supported a tornado. A Tornado warning was issued at 506 pm CDT and a tornado was reported only 2 minutes later.

The tornado briefly touched down along Highway 169 and destroyed most of a large farm, causing nearly 3 million dollars in damage. Witnesses reported that several vortices initially touched down on the farm before becoming one and then quickly lifting as the tornado approached Highway 169. At this point the tornado was nearly 200 to 300 yards wide and did significant structural damage to most of the buildings on the farmstead. The tornado was rated a high end EF-2 tornado at this location with winds near 130 mph. The tornado then lifted off the ground and remained aloft for nearly one mile prior to briefly touching down again. The second time it touched down it hit a second farmstead on the east side of Highway 169 about 1 mile north of the first damage report.

*(Continued on page 2)*

## NWS - Des Moines Receives NOAA Bronze Medal Award

On April 27, 2010, the National Weather Service offices located in Des Moines and Davenport, IA, and the North Central River Forecast Center located in Chanhassen, MN, received the National Oceanic and Atmospheric Administration Bronze Medal Award. The criteria defined by the Workforce Management Office (WFMO):



*"The Bronze Medal is the highest honor award that can be granted by the Under Secretary of Commerce for Oceans and Atmosphere. Winners are recognized annually at a formal ceremony held in the Washington Metropolitan area. The medals are awarded to individuals, groups (or teams), and organizations. Individuals and members of groups each receive a framed certificate signed by the Under Secretary. Organizations receive one certificate to represent the entire organization."*

The award was presented as a team award for providing 24 hour decision support services and life saving river flood warnings during the historic and destructive Midwest Floods of June 2008.

**Picture:** From left...Mindy Beerends (Meteorologist, NWS-Des Moines), Jeff Zogg (Senior Service Hydrologist, NWS-Des Moines, Scott Stockhaus – Hydrologist (North Central River Forecast Center (NCRFC)), Brian Connelly (top center) – (Senior Hydrologist, NCRFC), Terry Simmons (Data Acquisition Program Manager, NWS-Davenport), Mike McClure (Senior Meteorologist, NWS-Davenport).





## Tingley Tornado *continued from page 1....*

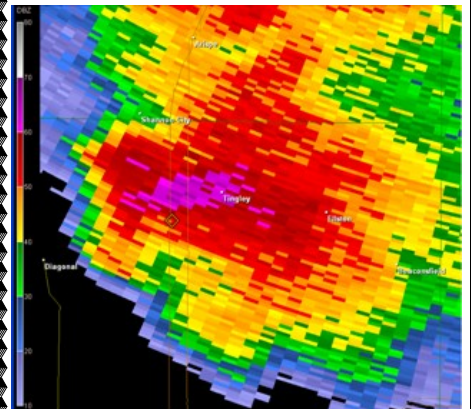
Between these two locations, the tornado briefly lifted off the ground and passed three other homes without doing any damage. At this location, significant damage was done to one outbuilding and several trees were snapped near their base. The home at this location, though not destroyed, may have suffered enough damage to become uninhabitable after the tornado hit the farm. The damage path at this location was about 100 yards wide and was rated a high end EF-1 tornado at this site with wind speeds of 110 mph.

Several photos at this location show the extent of the damage. The most severe damage occurred to an outbuilding just to the back of the home which also suffered significant structural damage.



*The second farmstead hit was about 1 mile up the road just to the south of 150<sup>th</sup> Street along Highway 169.*

*The first farm hit just north of 170<sup>th</sup> Street suffered severe damage. The following photographs show the magnitude of damage at this location.*

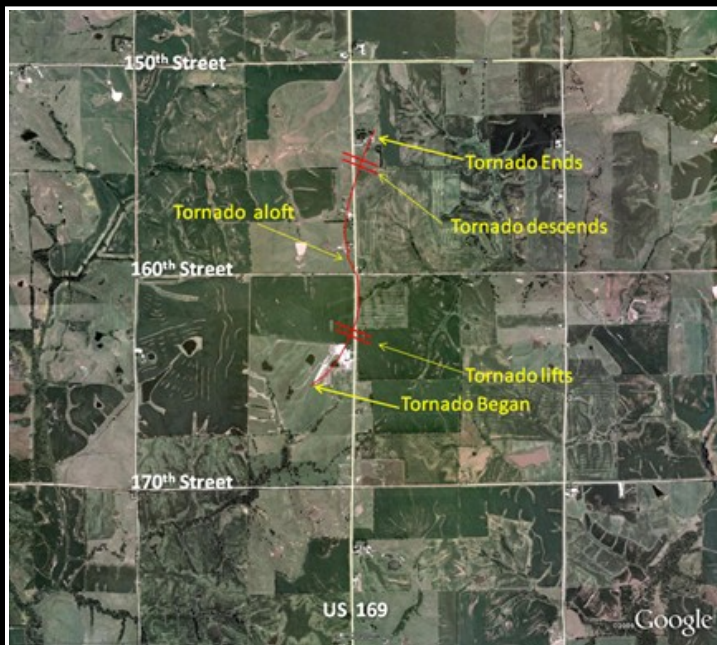


*Image Above: This is a storm reflectivity image of the tornado just to the east of Diagonal at 504 PM CDT on June 1, 2010. An area of strong reflectivity near Tingley signifies the intense updraft with this storm. An area of enhanced reflectivity near the southwest edge of the storm is near where the meso-cyclone and tornado formed.*



*Right Image Above: This is a storm relative velocity image of the tornado just to the east of Diagonal at 504 PM CDT. The velocity couplet is located southwest of Tingley, Iowa. The tornado is on the ground at this time and lasted only for about 10 minutes before the circulation weakened and the tornado finally dissipated.*





The path of the tornado can be seen in this image created with Google Earth and storm survey results by National Weather Service employees on June 2, 2010.

## New Auxiliary Windscreen around the OTT AWPAG Sensor

by David Reese, Electronics System Analyst

A new windscreen is to be installed on the All Weather Precipitation Accumulation Gauges (AWPAG) at the **Des Moines and Waterloo Airport's** Automated Surface Observation Systems (ASOS). The standard configuration of the OTT AWPAG consists of the precipitation accumulation gauge assembly surrounded by a metal fin windscreen assembly. Recently, OTT has developed an 8-foot diameter auxiliary windscreen assembly that surrounds the existing windscreen and bolts directly onto the existing windscreen support frame. This new auxiliary windscreen (working in combination with the existing windscreen) aids the catch efficiency of the AWPAG during wind-driven snow events. The new windscreen is constructed of four ring hoop segments and 64 lamellas, bolted around the gauge in an 8 foot diameter, and at a height of 1 5/8" higher than the existing windscreen. This modification should occur during the summer of 2010 at both sites.



## Consider Joining the CoCoRaHS Volunteer Network!

by Ben Moyer, Senior Meteorologist

CoCoRaHS (Community Collaborative Rain, Hail and Snow Network) is a volunteer, non-profit network of backyard weather observers who measure and report precipitation for the benefit of climatology, atmospheric and hydrologic research and forecasts, water resource management and education. As the CoCoRaHS website ([www.cocorahs.org](http://www.cocorahs.org)) says, "The only requirements to join are an enthusiasm for watching and reporting weather conditions and a desire to learn more about how weather can effect and impact our lives."

Nearly 20,000 active CoCoRaHS volunteers are now in all 50 states and growing. Please take the time to consider joining this network. All you need is a standard 4-inch diameter rain gage (easily purchased from several online merchants), something to measure snow with, and access to the internet to submit your daily reports.

Iowa currently has 450 registered volunteers, but the network can use as many volunteers as possible. The greater the number of reports, the more we can all learn. The distribution of rain, snow and hail is not even and by reporting what precipitation you receive, you help weather forecasters, climatologists, and water resource managers better understand local and global precipitation patterns, and their impacts. Network information specific to Iowa and details on how to become an observer can be found here:

<http://www.cocorahs.org/state.aspx?state=ia>.



Standard 4-inch diameter rain gage with inner tube and funnel.



## NWS Meteorologists Give Presentations at Regional Weather Conference hosted by the Central Iowa National Weather Association *By Melinda Beerends, General Forecaster*

Each year, since 1997, towards the end of March the Des Moines Metro Area has been home to a regional weather conference, "The Severe Storms and Doppler Radar Conference." The conference, hosted by the Central Iowa Chapter of the National Weather Association (NWA), is one of the largest NWA sponsored weather conferences in the United States, second only to the National NWA conference. The 3-day conference consists of presentations and workshops tailored toward the interests of meteorology students and faculty, television broadcasters, National Weather Service (NWS) meteorologists, emergency managers, and meteorological research professionals.

At this year's conference, three local meteorologists from the National Weather Service in Des Moines were able to give presentations. Karl Jungbluth, Science and Operations Officer, presented on the "Eldora" hail storm that occurred on August 9<sup>th</sup>, 2009, where a strong long-lived supercell thunderstorm produced an approximately 100 mile long swath of nearly continuous damage through northern Iowa from the combination of greater than baseball size hail and winds gusts over 100 mph. Dollar estimates from the crop damage alone were over \$175 million, and did not take into account property damage estimates from the city of Eldora where extensive damage was done to nearly every structure in town.



Another presentation was given by Lead Forecaster, Rod Donavon which included an update to a severe storm warning technique already in use at most NWS offices. Rod Donavon (and Karl Jungbluth) have created hail detection criteria for use in severe storm interrogation during severe weather warning operations. The technique uses specific heights of radar echoes to determine the size of hail within a thunderstorm and has been modified and adjusted to take into account the new 1" severe hail criteria, versus the old 0.75" hail criteria in use during previous years.

Rachel Hatteberg, our student employee and latest addition to the NWS DMX staff, also presented at the conference. Her presentation discussed computer model simulations of extreme wind events associated with severe storm complexes known as derechos which usually produce extensive amounts of damage in their wake. These storm complexes are a significant societal impact, and need advanced planning to mitigate the effects of these types of storms. The computer model simulated possible environmental changes expected in the future due to the impacts of climate change, and the affect these changes had on the specific environmental conditions needed for derechos to occur.

Other aspects of the conference included the Central Iowa NWA presenting its sixth *Pam Daale Memorial Scholarship*, in which a \$1000 scholarship is given to a Meteorology student with either sophomore or junior status at the time of the conference. Other notable topics at this year's conference were presentations on tornado tourism, the Murfreesboro, TN EF4 tornado that occurred in April 2009, a look at the meteorological research experiments of VORTEX2 and TWISTEX, and a blast from the past as the "Night of the Twisters" was remembered with 2010 marking the 30 year anniversary of the event. The conference also included an interactive radar warning workshop where everyone got their chance to be a NWS warning meteorologist, a broadcaster tape swap which provided a performance feedback session for current and future television broadcasters, and weather video presentations from severe weather chase teams.

In addition to the conference presenters, the NWS in Des Moines is proud to have two employees serving as cabinet members for the Central Iowa NWA. Ken Podrazik, General Forecaster, is Vice President of the chapter, and myself, Melinda Beerends, General Forecaster, is the current President of the chapter.

2009-2010 Seasonal Snowfall Statistics (July 1- June 30)

Location	Season Total	Departure	Previous Season Total
Des Moines	69.0"	+32.6"	41.3"
Mason City	42.8"	+3.4"	40.6"
Waterloo	52.8"	+17.9"	48.6"



## Send your Weather Reports to the NWS via Twitter *by Brad Small, Senior Meteorologist*

Trained weather spotters and the general public are now welcome to send their significant weather reports to the National Weather Service (NWS) via Twitter. These reports will automatically be forwarded to every NWS office in the country and also plot on a map if geotagging is available or the proper format is followed. You can also send links to pictures or video via third party applications either via your cell phone or computer. This is a great way to provide the NWS with near real-time feedback of what's happening with the weather or recent damage that has occurred.



**mtwxgirl #wxreport** pea size hail. Intense lightning. Glasgow, mt  
42 minutes ago via API from Montana, US



**edsoehnel #wxreport** WWW 39.34008, -104.96679 WWW 10 mm rain total for Sunday and Monday June 13 and 14.  
about 1 hour ago via HootSuite



**adclapp #wxreport** WWW W. Glendive, MT WWW (Forest Park) TStorm in progress-worst has passed. Had heavy rain, nickel sized hail, strong wind gusts.  
about 1 hour ago via web

If geotagging is available via your third party application, you do not have to add any additional formatting. However, if that is not available, your location needs to be surrounded by two capital Ws, at the beginning and end. Your location could be your zip code, city, address and latitude and longitude coordinates.

You can tweet any weather event that occurs in your local area, but we are most interested in significant events such as snowfall, severe weather and flooding. The following items are requested in particular. **Please remember that trained spotters are encouraged to submit high end reports through more traditional means such as our Skywarn phone line, eSpotter or amateur radio.**

### Weather Phenomena to report:

- Damage from winds, briefly describing what was damaged and the time it occurred.
- Hail, including the size of the hail and the time it fell.
- Tornadoes or funnel clouds.
- Flooding, briefly describing what is occurring.
- Snowfall during an event and the storm total. When reporting snowfall, please include the time period when it fell.
- Freezing rain or freezing drizzle producing a glaze on objects or roads.
- Dense fog restricting visibility to less than a half mile.

### Seasonal Snowfall Normals (July 1- June 30)

Location	Normal	2009-2010 Season Total
Des Moines	36.2"	69.0"
Mason City	39.4"	42.8"
Waterloo	34.1"	52.8"

For a detailed explanation of how this process works, please visit <http://www.weather.gov/stormreports>

## A New Fire Weather Forecast Product Will Begin This Fall

*by Frank Boksa, General Forecaster*

The National Weather Service in Johnston, IA is pleased to announce the introduction of the Fire Danger Index Product. The purpose of this product is to alert the public of conditions that create a high or extreme fire danger. Typically this will be in times of low humidity and strong winds.

Studies from the U.S. Fish and Wildlife Service and local office reviews have shown that at certain times during the spring and fall grass fires in central Iowa dramatically increase. The causes of these fires differ seasonally but the times of year are about the same. Our intention with this product is to alert the public of such times and to inform others in the fire weather community to take action to try and prevent grassland fires. Local government agencies may also want to use the data contained in this product to take actions in the prevention of grassland fires. This product may be issued anytime from March 1<sup>st</sup> through October 31<sup>st</sup>, but mainly in the early spring and early fall, whenever the fire danger index, as determined by computations of our fire danger index program, reaches high or extreme levels.

This product will not be issued on a daily basis because we want the public and the fire weather community to have a heightened awareness when seeing this product and to prepare to take action to prevent unprescribed grassland fires. We hope you find this product useful and informative.

For questions or comments please contact Frank Boksa, Fire Weather Focal Point at [Frank.Boksa@noaa.gov](mailto:Frank.Boksa@noaa.gov).

## Climatological Data for March to June 2010

Location	Month	Average Temp	Departure	Highest	Lowest	Rain / Snow	Departure
Des Moines	March	41.8°F	+3.4°F	79°F (31 <sup>st</sup> )	13°F (2 <sup>nd</sup> )	2.18" / 6.7"	-0.03" / +2.6"
	April	58.7°F	+8.1°F	86°F (1 <sup>st</sup> , 6 <sup>th</sup> )	33°F (8 <sup>th</sup> , 9 <sup>th</sup> )	4.69" / 0.0"	+1.11" / -2.7"
	May	62.9°F	+1.0°F	91°F (24 <sup>th</sup> )	35°F (9 <sup>th</sup> )	4.79" / 0.0"	+0.54" / 0.0"
	June	74.1°F	+2.7°F	92°F (22 <sup>nd</sup> , 26 <sup>th</sup> )	57°F (6 <sup>th</sup> )	13.41" / 0.0"	+8.84" / 0.0"
Mason City	March	35.8°F	+2.9°F	78°F (31 <sup>st</sup> )	3°F (4 <sup>th</sup> )	1.46" / T	-0.78" / -6.1"
	April	52.5°F	+6.1°F	86°F (1 <sup>st</sup> )	22°F (9 <sup>th</sup> )	3.99" / 0.0"	+0.63" / -2.7"
	May	59.0°F	0.0°F	92°F (24 <sup>th</sup> )	28°F (9 <sup>th</sup> )	3.20" / 0.0"	-1.14" / 0.0"
	June	67.9°F	-0.8°F	89°F (22 <sup>nd</sup> )	48°F (3 <sup>rd</sup> )	5.94" / 0.0"	+0.98" / 0.0"
Waterloo	March	38.8°F	+3.8°F	77°F (31 <sup>st</sup> )	3°F (5 <sup>th</sup> )	0.99" / 1.5"	-1.14" / -3.3"
	April	54.0°F	+6.2°F	84°F (1 <sup>st</sup> )	29°F (9 <sup>th</sup> )	5.10" / 0.0"	+5.10" / -2.2"
	May	60.6°F	+0.4°F	92°F (24 <sup>th</sup> , 30 <sup>th</sup> )	30°F (9 <sup>th</sup> )	4.44" / 0.0"	+0.29" / 0.0"
	June	70.2°F	+0.3°F	88°F (24 <sup>th</sup> )	51°F (30 <sup>th</sup> )	7.95" / 0.0"	+3.13" / 0.0"
Ottumwa	March	40.8°F	+1.2°F	78°F (31 <sup>st</sup> )	11°F (2 <sup>nd</sup> )	1.37" / M	-0.98" / M
	April	56.6°F	+5.0°F	87°F (1 <sup>st</sup> )	31°F (9 <sup>th</sup> )	2.61" / M	-0.67" / M
	May	60.7°F	-2.2°F	90°F (24 <sup>th</sup> )	32°F (9 <sup>th</sup> )	3.81" / M	-0.75" / M
	June	73.0°F	+0.5°F	90°F (23 <sup>rd</sup> )	54°F (1 <sup>st</sup> )	12.36" / M	+7.85" / M

## Outlook for the Remainder of the Summer and the Fall of 2010

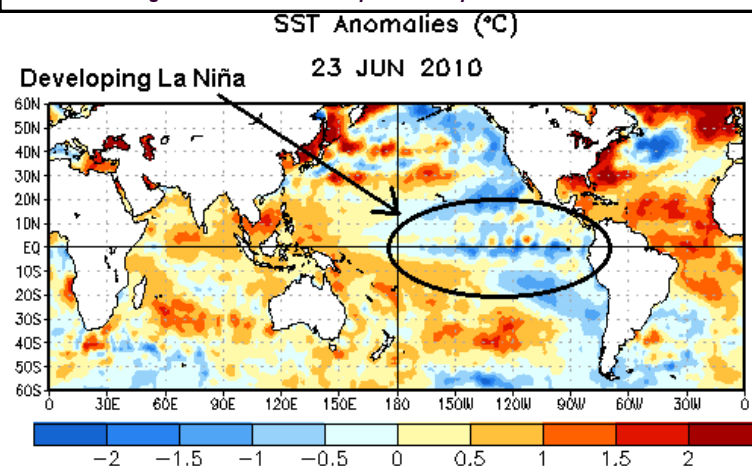
by Miles Schumacher, Senior Meteorologist

The spring turned out to be a warm spring in spite of the heavy snowfall of the previous winter. The active weather pattern of the winter contin-

ued into the spring with rainfall well above normal across the state. El Niño weakened through the spring with the equatorial Pacific sea surface temperatures returning to near neutral conditions by May. The transition may have contributed to the jet stream becoming locked in place for the past few weeks and leading to the heavy rainfall.

As we head into the late summer and fall, many wonder if the wet weather will continue. Those who are familiar with Iowa know that just because it was very wet in June does not mean that will continue, as Iowa's weather often makes sudden changes. The Pacific Ocean is rapidly slipping from neutral to a La Niña state. The development of cool water in the equatorial zone of the eastern Pacific can be seen in Figure 1.

Figure 1: Sea surface temperature departure from normal.



The atmospheric response to La Niña is fairly weak during the summer. There is a slight tendency for warmer temperatures and some tendency toward drier weather. The effects are stronger during the second year of La Niña, which if the current trends continue, would affect the summer of 2011. Precipitation tendencies are toward the drier side during La Niña summers. Although equatorial conditions in the Pacific are trending toward La Niña, it is still in the developing stage. Various models are used as a guide and the overall consensus is that La Niña conditions are developing and there is a fair likelihood the upcoming fall and winter will be dominated by La Niña. That would suggest there will be an influence on the weather in Iowa later this summer and fall. Figure 2 shows the central Pacific sea surface temperature departure (black line)

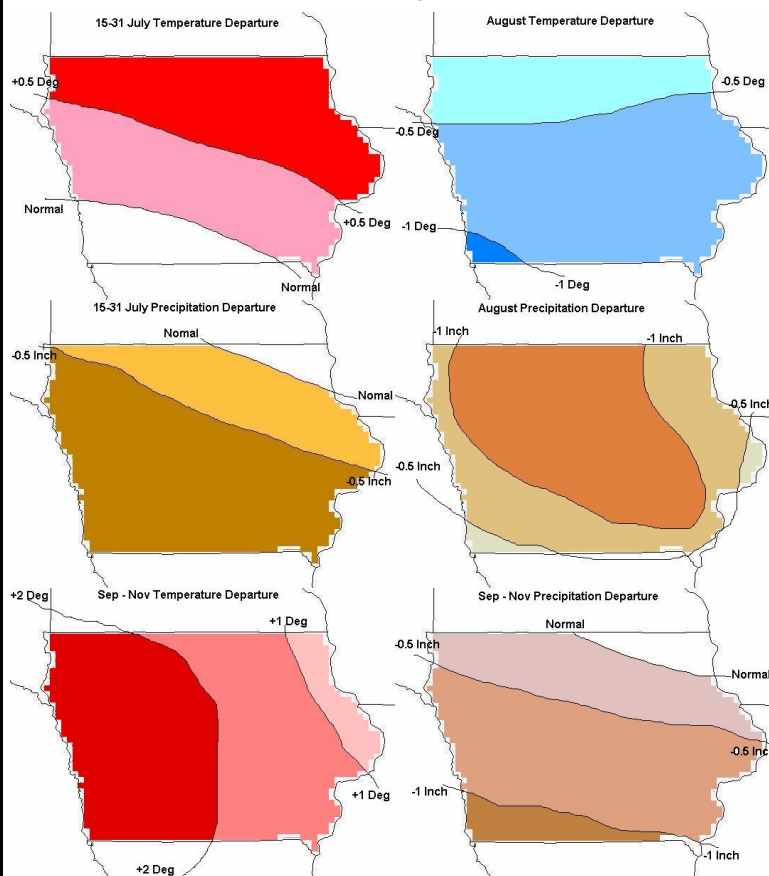
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## Fall Outlook

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and a series of forecasts (red and blue lines) through the time period centered on February 2011.

Although in meteorology, no two years are the same, one can look at weather patterns of the recent past to give some indications of near term weather trends in the future. This forecast is based on the best fit from several of the years that were similar to the spring and early summer thus far. Considerations were also made for La Niña and other factors that control our weather. The effects of La Niña are likely to increase with time as the current event continues to strengthen. This would lead to a stronger influence on weather across Iowa by the later summer into the fall months. Looking at years similar to the recent past suggest temperatures are not likely to stray all that far from normal during the rest of the summer. The last half of July will likely be a little above normal, while some cooling relative to normal is expected



**Figure 5: Mean temperature departure from normal forecast for the fall (left), and mean precipitation departure for the fall (right).**

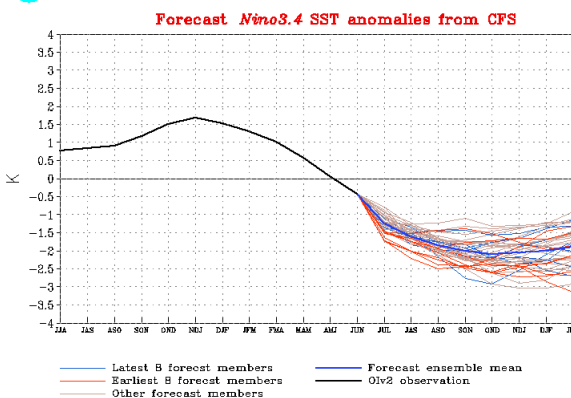
erally drier than normal, is not expected to depart from normal by much more than an inch during the season (Fig. 5).

These outlooks are based more heavily on statistics than many of the methods used by the [Climate Prediction Center](http://www.cpc.ncep.noaa.gov/) (<http://www.cpc.ncep.noaa.gov/>). The complete set of official forecasts from the Climate Prediction Center can be found on our [web-site](http://www.weather.gov/climate/climate_prediction.php?wfo=dmx) ([http://www.weather.gov/climate/climate\\_prediction.php?wfo=dmx](http://www.weather.gov/climate/climate_prediction.php?wfo=dmx)).

♦ **Fun Fact:** June 2010 was the fourth-wettest June on record at Des Moines with 13.41" of rain, just barely behind the 13.45" received in 2008. The wettest June (and wettest month) at Des Moines was in 1881 when 15.79" of rain fell.



Last update: Thu Jul 1 2010  
Initial conditions: 20Jun2010-29Jun2010



**Fig 2: Sea surface temperature departure for the past year and projection into the winter of 2011. Departure in degrees K is shown on the ordinate, with time on the abscissa.**

**Figure 3: Mean temperature departure forecast for 15-31 July on the left, and August on the right.**

in August. For the temperature departure maps of the last half of July and August, see Figure 3. Again, the signal is weak for summer temperatures effects due to La Niña, especially during the first summer of an event. The trend is a bit stronger for precipitation.

There is a somewhat stronger signal with summer precipitation. Though we started out the summer very wet, it does look like the rest of the summer will trend drier. The odds lean slightly toward drier weather for the last half of July, and a little stronger heading into August. By August, it appears upper level high pressure will become stronger over the central U.S. with odds favoring drier weather (Fig. 4).

As we move into the fall, the influence of La Niña is expected to increase. Not only is the strength of the La Niña expected to be stronger, nearly moderate strength, but there is a stronger signal of the influence of La Niña on weather in Iowa during the fall. Both the influence of La Niña and the analog years of recent past weather suggest the fall will average a little warmer and drier than normal. The odds of warmer than normal fall weather are about 60%, and drier than normal conditions ranging from near 50% over the northeast to 70% over the southwest. Temperature this fall may well average fully 1 to 2 degrees above normal across the state. Rainfall, though generally drier than normal, is not expected to depart from normal by much more than an inch during the season (Fig. 5).





## Employee Spotlight—Roger Vachalek

National Weather Service Office in Anchorage, Alaska – where I began my Weather Service career in 2002. Prior to that, I worked for a television station in Eastern Iowa – broadcasting on both television and radio for 14 years from 1987 to 2001. I graduated from the University of Wisconsin – Madison with a Bachelor's and Master's Degree in Meteorology in 1987. I grew up in Milwaukee, Wisconsin along the shores of Lake Michigan and gathered an interest in weather at the age of five. I've spent most of my professional life forecasting Iowa's weather – for over 20 years now – and feel that it's one of the best places to be for both weather and my favorite hobby – bicycling. I ride 2000 or more miles each summer. I've ridden RAGBRAI three times – one of those people! After living on a working farm for 10 years while living in Eastern Iowa, I've come to appreciate and respect the long standing tradition of the American farmer. Great down to earth folks who work hard, play hard and try to make the most of life. I like to live by that rule and honor the memory and work ethic of my father who fought in World War II. Hobbies include cycling, cooking, reading, computers, and travel.

I have been at the Des Moines Office since 2004, after transferring from the

## Administrative Professional's Day—Gail Boeff by Brenda Brock, Meteorologist-in-Charge



Gail Boeff, Administrative Support Specialist, was honored on Administrative Professional's Day as the gatekeeper for National Weather Service Des Moines. In addition to her cheerful greeting when you enter the NWS, you will see her handling administrative duties such as payroll, budgets, scheduling tours and conducting customer service.

## Partner Input Group by Brenda Brock, Meteorologist-in-Charge



The NWS Des Moines Partner Input Group provides a process for continual customer service improvement by requesting feedback on NWS products and services. Featured on the left, is a Partner Input Group poster that was presented at a National NWS Manager's Conference by Brenda Brock, Meteorologist in Charge.

## Beat the Heat by Aubry Wilkins, Meteorologist Intern

be. In contrast to the visible, destructive, and violent nature of thunderstorms, tornadoes, and floods, heat is a silent killer. Heat kills by taxing the human body beyond its abilities.

In a normal year, about 175 Americans succumb to the demands of summer heat. In fact, in a 40-year period from 1936-1975 nearly 20,000 people were killed in the United States by the effects of heat and solar radiation. In a 1995 heat wave, more than 700 deaths in Chicago, IL were attributed to the heat. And these are the direct casualties. No one can know how many additional deaths are advanced by heat-wave weather.

Cities pose special hazards when it comes to heat. The stagnant atmosphere traps pollutants in urban areas, which adds to the stresses of hot weather. In addition, concrete, asphalt and other industrial materials common in cities trap heat during the day, and keep the air temperature warmer at night.

### What to Listen For:

- ♦ **Heat Advisory:** Heat Index values are expected to reach or exceed 105 degrees or an absolute maximum temperature of 100 degrees is expected in the next 24 hours.
- ♦ **Excessive Heat Watch:** Conditions are favorable for temperatures to reach excessive heat criteria in the next 12 to 48 hours.
- ♦ **Excessive Heat Warning:** Heat Index values are expected to reach or exceed 110 degrees, and not fall below 75 degrees, for at least a 48 hour period beginning in the next 24 hours.

**What is the Heat Index?** The Heat Index (HI) is also sometimes referred to as the "apparent temperature" and is a measure of how hot it feels outside. The HI includes the influence of relative humidity and, in general, as the relative humidity increases, the apparent temperature also increases. To figure out the HI you can look at the Heat Index Chart and find the intersection of

(Continued on page 13)



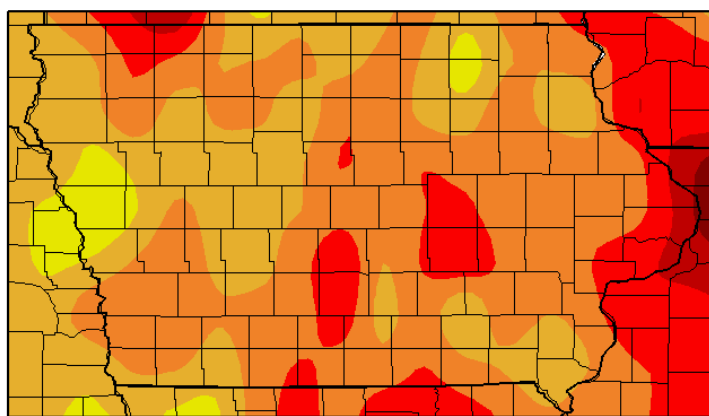
## Iowa Statewide Averages and Rankings for Temperature and Precipitation

Month	Temperature	Departure from Normal	Rainfall	Departure from Normal	Temperature Ranking	Precipitation Ranking
March 2010	39.7°F	+3.4°F	1.85"	-0.36"	27 <sup>th</sup> Warmest	64 <sup>th</sup> Wettest
April 2010	55.3°F	+6.8°F	3.64"	+0.31"	5 <sup>th</sup> Warmest	38 <sup>th</sup> Wettest
May 2010	60.6°F	+0.4°F	4.28"	+0.05"	60 <sup>th</sup> Warmest	51 <sup>st</sup> Wettest
<b>Spring 2010 (March—May)</b>	<b>51.8°F</b>	<b>+3.6°F</b>	<b>9.77"</b>	<b>+0.00"</b>	<b>8<sup>th</sup> Warmest</b>	<b>51<sup>st</sup> Wettest</b>
June 2010	71.4°F	+1.6°F	10.38"	+5.81"	33 <sup>rd</sup> Warmest	1 <sup>st</sup> Wettest

*Table above: statewide rankings are based upon 138 years of records. All values are preliminary.*

### March through June 2010 Weather Review *by Craig Cogil, Senior Meteorologist*

Departure from Normal Temperature (F)  
4/1/2010 – 6/30/2010

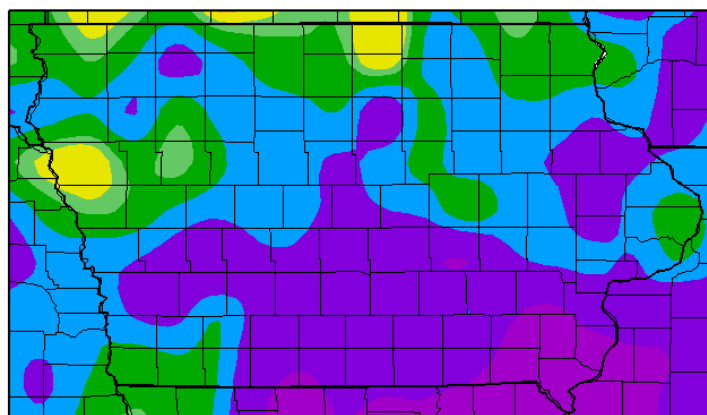


Generated 7/11/2010 at HPRCC using provisional data.

NOAA Regional Climate Centers

**Temperatures:** Iowa temperatures during the spring into the early summer months were above normal across the entire state. April saw very warm temperatures with a statewide average coming in almost 7 degrees above normal in the state. Overall for the spring, the state averaged the 8<sup>th</sup> warmest on record over the past 138 years. The warmth continued into the early summer with June remaining above average throughout the state.

Percent of Normal Precipitation (%)  
4/1/2010 – 6/30/2010



Generated 7/11/2010 at HPRCC using provisional data.

NOAA Regional Climate Centers

**Precipitation:** Precipitation during the spring was close to normal for all months. The biggest departure during the spring was in March when the state averaged just 0.36" below normal. For the season, the wettest areas were in southeast Iowa where precipitation was over 150% of normal. Meanwhile in the northwest, precipitation was only 70 % of normal in some locations. However, everything moistened in June with the second wettest month ever in the state when an average of 10.38" of rain fell. The highest month ever for statewide average precipitation was July of 1993 with 10.50". The entire state saw above normal precipitation with almost 300% of normal rainfall in the southeast. The rains lead to widespread flooding, especially in the Des Moines river basin.

## 2010 Cooperative Observer Length of Service Awards *by Brad Fillbach, Cooperative Program Manager*



Janet Lindstrom (right) of Rockwell City, Iowa receives her 15 year Length of Service award from Brad Fillbach, HMT, WFO Des Moines.

Ross Rekemeyer of Albia, Iowa recently received his 25 year Length of Service award. Picture: (left) Ross Rekemeyer (right) Brad Fillbach, HMT, WFO Des Moines.



Richard Corkrean of Winterset, Iowa receives his 25 year Length of Service award presented to him by Brad Fillbach, HMT, WFO Des Moines.



Floyd Skellenger of Northwood, Iowa receives his 15 year Length of Service award. Pictured: Floyd Skellenger (left) and Rob Deroy, DAPM, WFO Des Moines (right).

Mick Ware of Bedford, Iowa receives a Letter of Appreciation for his 5 years of service presented to him by Brad Fillbach, HMT, WFO Des Moines.



## Why wasn't there record flooding with record June rainfall? *by Jeff Zogg, Senior Hydrologist and Roger Vachalek, General Forecaster, with contributions from Harry Hillaker, State Climatologist*

June 2010 was the wettest month on record for statewide average precipitation for Iowa. In addition, June 2010 was the wettest month ever at many locations. Although our state saw widespread river flooding in June, it was not as severe as other flood events, such as June of 2008 or July of 1993. Why was that? If we saw record rainfall in June, then why did we not see record flooding? There are multiple reasons. Read below for some of the more significant ones.

**Average temperatures for April through June of this year were about 6 degrees warmer than the same months in 2008 and 1993.** Thus, there was about 20% more evaporation this year than in 2008 and 1993. This additional evaporation has helped facilitate more drying between rain events.

**Spring rainfall this year was near normal, compared to the same times in 2008 and 1993 which saw much above normal rainfall.** The normal rainfall this spring allowed many rivers in our state to return to near normal levels, despite widespread flooding from the melting record snow pack earlier in the season. In contrast, above normal rainfall in the spring of 2008 and 1993 pushed river levels above normal, helping to prime them for severe flooding later.

**The rainfall in June of this year was distributed fairly evenly both geographically and temporally, compared to the same times in 2008 and 1993 which saw very intense and focused rainfall.** The fairly even geographic and temporal distribution of rainfall this year helped mitigate significant hydrologic responses on our rivers by placing relatively lower amounts of water in each of our state's river basins. In 2008 and 1993, very heavy rainfall was focused in just a few river basins and over shorter time periods. As a result, those affected rivers were greatly overwhelmed and produced severe flooding.



## Flood insurance—why have it? Where can I buy it? *by Jeff Zogg, Senior Hydrologist*

This year's flooding has led to many questions regarding flood insurance. Unfortunately, many misconceptions exist regarding it. For example, contrary to what some people think, you can purchase flood insurance for property in nearly any location—not just properties in the flood plain. Also, you cannot wait until flooding is imminent to purchase flood insurance. In most situations, a 30-day waiting period is required.

Below is a list of frequently asked questions which I have received, along with the answers. If you have any more questions contact me at [jeff.zogg@noaa.gov](mailto:jeff.zogg@noaa.gov). Note: the term "community," as used in this article, includes counties. In other words, "community" is used synonymously with the word "county."

**Why should I have flood insurance? Doesn't my homeowners or commercial property insurance already cover flood damage?** Most homeowners and commercial property insurance policies do not cover flood damage. Floods are the #1 natural disaster in the United States however. They are more common than tornadoes, earthquakes and fires. They have caused nearly \$24 billion in U.S. flood losses in the last 10 years. There is a 26% chance of experiencing a flood during the life of a 30-year mortgage in high-risk areas. If your home or business is in a high-risk area, it is more than twice as likely to experience a flood than a fire.

**What about flood-related disaster assistance? Why not just use that assistance instead of having flood insurance?** When flooding causes extensive and widespread damage, the Governor or President may make a disaster proclamation. These proclamations can make disaster-related money assistance available to affected property owners. It is important to know that this disaster assistance is typically not a grant or forgivable loan however. Instead, it is typically a loan that you must repay with interest. For a \$50,000 loan at 4% interest, your monthly payment would be around \$240 a month (i.e., \$2,880 a year) for 30 years. Compare that to the premium for a \$100,000 flood insurance policy, which is around \$400 a year (\$33 a month).

**Why not just wait to purchase flood insurance until the flood is a few days away?** It takes 30 days after purchase for a policy to take effect, so it is important to buy insurance before the floodwaters start to rise. Aside from snow melt floods, most floods occur with much less than 30 days advance notice.

An exception to the 30-day waiting period is when flood insurance is required as part of a mortgage. Flood insurance is mandatory if your property is in a high-risk area or a Special Flood Hazard Area (SFHA) and you have a Federally-backed mortgage.

**Is flood insurance available only for my home?** No. You can purchase flood insurance for both residential and commercial coverage.

**Is flood insurance available only for locations in the flood plain?** No. You can purchase flood insurance for nearly any location, whether or not it is in a flood plain. Everyone lives in a flood zone—but some areas are at a higher risk of flooding than others. It is good to buy flood insurance for properties outside the flood plain. Nearly 25% of all flood insurance claims come from moderate- to low-risk areas (i.e., outside the flood plain).

**I am in a low-risk area for flooding. This risk will never change over time, right?** Not necessarily. The risk of flooding at the same location may increase or decrease over time. New land development can increase flood risk. Increases in precipitation amounts may also increase the flood risk. So just because you are in a low-risk area now does not necessarily mean that your risk of flooding will stay that way. You may be in a moderate- to high-risk area later.

**So if I can purchase flood insurance for nearly any location, are there any other limitations?** Yes. You can purchase flood insurance only if your community participates in the NFIP. You can find a list of communities that participate in the NFIP on the FEMA Web site at: <http://www.fema.gov/fema/csb.shtm>

**What if my community does not participate in the NFIP?** Your community must be an active participant in the NFIP in order for you to purchase flood insurance. According to FEMA, a community must submit an application package which includes the below information. Contact your community officials to start this process. You can find information on NFIP application procedures, including contacts on the FEMA Web site at: <http://www.fema.gov/plan/prevent/floodplain/>

**How much does flood insurance cost?** Flood insurance premiums take into account the risk of flooding as well as the amount of coverage you desire. If you live in a moderate- to low-risk area and are eligible for the Preferred Risk Policy, your flood insurance premium may be as low as \$119 a year, including coverage for your property's contents. The average flood insurance policy costs less than \$570 per year.

(Continued on page 12)

## Flood Insurance *continued from page 11...*

To find your flood risk and estimate your flood insurance premium, use the One-Step Flood Risk Profile on the left hand side of the FloodSmart.gov Web page at: <http://www.floodsmart.gov/>



**FloodSmart.gov**  
The official site of the NFIP

**Are discounts available for flood insurance premiums?** Yes. If your community participates in the Community Rating System (CRS), you can qualify for an insurance premium discount of up to 45%.

The CRS is a subset of the NFIP. It is a voluntary incentive program which recognizes and encourages community floodplain management activities which exceed the minimum NFIP requirements. As a result, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community actions meeting the three goals of the CRS:

- ◆ *Reduce flood losses*
- ◆ *Facilitate accurate insurance rating*
- ◆ *Promote the awareness of flood insurance*

Community participation on the CRS is in addition to participation in the NFIP. Participation in the NFIP does not automatically include participation in the CRS. Your community must initiate the process to participate in the CRS. As of 6/25/2010, two communities in Iowa actively participate in the CRS. The average discount for a properties in high-risk areas or Special Flood Hazard Area (SFHAs) is 13%. The average discount for properties in other locations is 5%. You can find more information on the CRS, including application instructions and a listing of actively participating communities on the FEMA Web site at: <http://www.fema.gov/business/nfip/crs.shtm>

### **My community is StormReady. Does this designation entitle my community to additional discounts under the CRS?**

Not necessarily. The National Weather Service designed the StormReady program to help communities better prepare for and mitigate effects of extreme weather-related events. StormReady also helps establish a commitment to creating infrastructure and systems which save lives and protect property. Receiving StormReady recognition does not mean that a community is storm proof, but StormReady communities will be better prepared when severe weather strikes.

If your community is StormReady, then information related to this designation should definitely be included in your community's CRS application materials. The decision to provide an additional discount due to a StormReady designation is at the sole discretion of the NFIP and CRS decision makers.



You can find more information on the StormReady program on the NWS Web site at: <http://www.stormready.noaa.gov/>

**Where exactly do I go to purchase flood insurance?** In most cases, you can purchase flood insurance through those insurance agents who have agreed to work with the NFIP. They may or may not be the insurance agent you presently use for homeowners or commercial property insurance. You can find a list of flood insurance agents near you on the NFIP Web site at: [http://www.floodsmart.gov/floodsmart/pages/choose\\_your\\_policy/agent\\_locator.jsp](http://www.floodsmart.gov/floodsmart/pages/choose_your_policy/agent_locator.jsp)

**Make sure you know the coverage and limitations of flood insurance before you buy.** Before you purchase a flood insurance policy, it is important to review what is covered and what is not covered by flood insurance. You should also compare the coverage and exclusions of both flood insurance and your existing homeowners or commercial property insurance. Make sure you understand what would be covered and what would not be covered if a flood does impact your property. See your flood insurance agent for details.

**For more information:** You can find more information on the NFIP at the FloodSmart Web site. You can also use the One-Step Flood Risk Profile on the left hand side of the page to find your flood risk and estimate your flood insurance premium. The FloodSmart Web site is at: <http://www.floodsmart.gov/>

- ◆ **Fun Fact:** A remarkable hail storm occurred in southwestern Iowa on August 6th, 1890 where an observer near Orient wrote that "the hail destroyed all green vegetation and small animals, such as rabbits, ground squirrels, etc., and all the birds. It varied in size from a quail's egg to a hen's egg, and drifted in many places to a depth of six feet, where it remained, when protected by the trash, for twenty-six days after the storm, or until September 1st."



## Lightning Safety *by Aubry Wilkins, Meteorologist Intern*

Summer is the peak season for one of the nation's deadliest weather phenomena: lightning. But don't be fooled, lightning strikes year round. In the United States, an average of 58 people are killed each year by lightning. As of mid July, there have been 14 lightning deaths in 2010.

Hundreds of people are permanently injured each year. People struck by lightning suffer from a variety of long-term, debilitating symptoms, including memory loss, attention deficits, sleep disorders, chronic pain, numbness, dizziness, stiffness in joints, irritability, fatigue, weakness, muscle spasms, depression, and more.

Lightning is a serious danger. Here are a few tips we hope you'll use to protect yourself, your loved ones and your belongings.

- ⚡ **No place outside is safe when thunderstorms are in the area!**
- ⚡ *If you hear thunder, lightning is close enough to strike you.*
- ⚡ *When you hear thunder, immediately move to safe shelter.*
- ⚡ *Safe shelter is a substantial building or inside an enclosed, metal-topped vehicle.*
- ⚡ *Stay in safe shelter at least 30 minutes after you hear the last clap of thunder.*
- ⚡ *If someone is struck by lightning, they do not carry an electrical charge and may need immediate medical attention. Monitor the victim and begin CPR or AED, if necessary. Call 911 for help.*

### Beat the Heat *continued from page 8...*

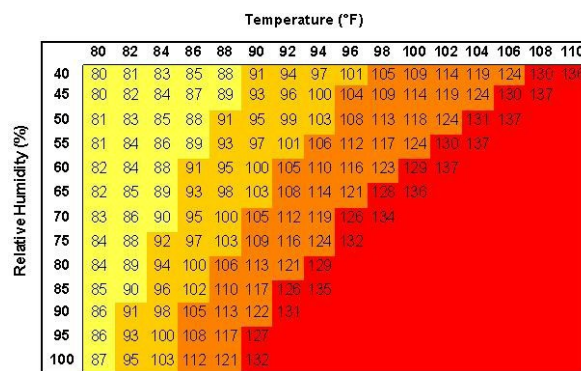
the air temperature and relative humidity. The shaded zones on the chart correspond to increased probabilities of developing heat related disorders. It is important to note that the HI values were devised for shady, light wind conditions, and therefore, exposure to full sunshine can increase HI values up to 15°F.

#### Tips for Beating the Heat:

- *Never leave children or pets alone in enclosed vehicles.*
- *Stay hydrated by drinking plenty of fluids even if you do not feel thirsty. Avoid drinks with caffeine or alcohol.*
- *Eat small meals and eat more often. Some foods can increase metabolic heat production and increase water loss.*
- *Wear loose-fitting, lightweight, light-colored clothing. Light-colored clothing reflects sunlight and can help your body maintain normal temperatures.*
- *Slow down, stay in the coolest place available (not necessarily indoors) and avoid strenuous exercise during the hottest part of the day.*
- *Strenuous outdoor activities should be reduced, eliminated, or re-scheduled to the coolest time of day. Take frequent breaks if you must work outdoors.*

#### 2010 Lightning Deaths in America

Date	State	Age	Sex	Location	Activity
May 1	IN	18	M	Under tree	Sheltering from storm
May 8	CT	29	M	On jetty	Heading to shore (had been fishing)
May 30	LA	8	M	Outside	Went back outside
May 31	OH	33	M	Outside	Headed toward building
June 4	NC	25	F	Near mountain top	Hiking
June 12	CO	53	M	Highway	Riding motorcycle
June 15	MO	34	F	Under tree	Postal worker delivering mail
June 15	NC	19	M	Under tree	Had been playing soccer
June 20	WY	70	M	Open hilltop	Getting better cell phone reception
June 24	TX	37	M	On boat	Crabbing
June 29	GA	14	M	Outside home	Sheltering under tree
July 10	AZ	53	M	Golf course	Golfing
July 11	WY	63	M	In mountains	Running
July 13	GA	16	F	Outside home	Sheltering under tree



Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity  
 Caution Extreme Caution Danger Extreme Danger

Heat Index	Possible heat disorders for people in high risk groups
80°-90°	Fatigue possible with prolonged exposure and/or physical activity.
90°-105°	Heatstroke, heat cramps and heat exhaustion possible with prolonged exposure and/or physical activity.
105°-130°	Heatstroke, heat cramps and heat exhaustion possible with prolonged exposure and/or physical activity.
130° or higher	Heatstroke highly likely with continued exposure.

NATIONAL  
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DES MOINES IA

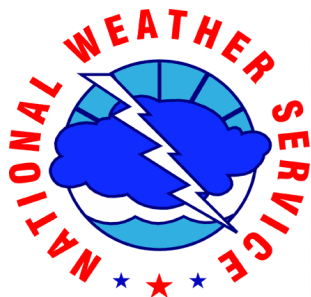
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Central Iowa  
The Weather Whisper

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Ben Moyer  
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## The NWS and Iowa Emergency Management Booth at the 2010 Iowa State Fair *by Ken Podrazik, General Forecaster*

A booth organized and staffed by the National Weather Service (NWS) and Iowa Emergency Management Association (IEMA) will be on display in the Hall of Flame under the grandstand at the Iowa State Fair. This year's booth will include posters on climate statistics over the past year, historical weather history, and case studies on different weather phenomena. Several handouts will be available including one for weather safety, a NWS website guide, a coverage map of the NOAA Weather Radio, and a cloud chart. Two flat screen TVs are going to be on display and one will feature current radar and satellite imagery, temperatures across Iowa, and the 7-day forecast for the State Fair. The second TV will consist of several images and videos from the NWS and Emergency Managers from different weather events over the past couple of years in Iowa. A Van De Graff generator, lightning tube, and current temperature gage will also be on display. And, as always, employees from the NWS and Emergency Management Association will be on hand to visit or answer your questions. There is going to be plenty to see at the State Fair, but be sure to make the NWS and IEMA booth one of your stops. We look forward to seeing you.

*The Van De Graff Generator on display at the  
Iowa State Fair at the NWS/IEMA Booth.*

